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# MEREC-GUARDA: AN ENERGY AND RESOURCE EFFICIENCY PROCESS UNDERMINED BY THE EARLY STAGES OF A DEMOCRATIC SETTING

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This article focuses on the historical background which led to the implementation of an EUA programme in a European country; a programme designed for developing countries. To that end, we seek to discern, how 1980's Managing Energy and Resource Efficient Cities (MEREC) methodology has perpetuated in urban planning and architecture practice as well as in the discourses of its stakeholders.

Guarda is a medieval border town (1050m) in the hinterland of Portugal, far away from the impact of metropolitan areas, such as Lisbon or Porto. Guarda kept a balanced urban growth over the years, but demography and key sectors of the economy changed profoundly after the Portuguese democratic revolution (1974).

Serving as an early experience towards city resilience and sustained development, MEREC was a programme developed by the United States Agency for International Development (USAID). Inspired by the work of Richard Meier (1974), MEREC answered to the growing concerns triggered by the 1970s energy crisis and its consequences. Amid a rapid urbanisation and population growth, increased energy costs and pressure on natural resources, MEREC targeted cities in developing countries which could adopt preventive approaches towards resource efficiency. However, instead of concentrating its efforts on metropolitan areas, MEREC aimed at the development of secondary cities, where most of the growth had yet to come.

From 1983 to 1985, MEREC established a comprehensive planning process, involving Guarda Municipality, central and regional agencies and the know-how of Portuguese universities and private consultants. MEREC identified the city's problems in water supply, urban waste, urban management, changes in local building materials used and scattered urbanisation. Several of these problems had been overcome with the project's completion, the development of Guarda's master plan, research technology, and awareness campaigns.

USAID-MEREC advisors considered the results achieved in Guarda as rewarding. Architect Maria Castro (1989) points out the clarity achieved in the decision-making processes for urban planning and management during the MEREC programme. However, as she notes, discourses and institutional support changed after MEREC. MEREC's methodology was somehow thrown away, suggesting a lack of planning culture among local political powers, unwilling to redirect resources. MEREC happened ten years after Portugal's dictatorship had ended, when the country was committed to the world as a democratic country, facing political and economical instability until its accession to the European Economic Union (EEC), as well as, undergoing deep socio-cultural transformations and striving for development. From 1986 onwards, MEREC programme was hampered by a democratic setting that aimed for development in more immediate ways, regardless of the resource-efficiency strategy proposed.

## Keywords

Guarda, USAID, MEREC, energy and resource efficiency, comprehensive planning, decentralisation, master plan, urban design, local building materials, modernity

## How to Cite

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## INTRODUCTION: A PROJECT FOR MIDSIZED CITIES' RESILIENCE TO ENERGY AND RESOURCE SHOCKS

From 1981 to 1987 the United States Agency for International Development (USAID) developed a project called Managing Energy and Resource Efficient Cities (MEREC). MEREC was a response to growing concerns triggered by the 1970s energy crisis and its consequences. The project targeted rising urban demands on scarce energy and natural resources in developing countries.<sup>1</sup> MEREC's design was inspired by the research of Richard Meier, a US regional planner and system theorist. In his book *Planning for an Urban World: The Design of Resource-Conserving Cities*, Meier devoted his study to the achievement of urban social justice through scientific and technological solutions. He focused on the study of the environment, energy and resource scarcity and how they interact in cities.<sup>2</sup> Contracted by USAID, Meier et al developed a report on *The Urban Ecosystem and Resource Conserving Urbanism in Third World Cities*.<sup>3</sup> They aimed to develop policies for energy conservation, to design better infrastructures, and examined the resilience of cities to potential shocks in resource availability. They were focused on metropolitan areas, not only because they are the most dependent on energy and resources, but also because large cities' resilience to high levels of urbanization and urban resource consumption that relies on the existence and improvement of mutual relationships inside the city and with its suppliers.<sup>4</sup> This research produced straight forward recommendations<sup>5</sup> for the analysis of urban ecosystems<sup>6</sup> which became part of final MEREC project-design.<sup>7</sup>

Through efforts in addressing concerns related to resources with focus on metropolitan areas, MEREC-AID studies found, that *"smaller cities offered opportunities to build energy and resource efficiency that were in early stages of formation."*<sup>8</sup> Small and midsized/secondary cities<sup>9</sup> presented a feasible territory for adjusting resource inefficiencies, adopting modest measures with a great economy of means, where institutional backgrounds tended to be more flexible, approachable and, capable to give the easiest and more timely responses to energy concerns. Thus, MEREC's project design undertook action-research consistent of demonstration projects in midsized cities. After a pilot run in Tacloban, Philippines, two other cities followed: Pukhet, Thailand and Guarda, Portugal. In 1983, USAID and the Tennessee Valley Authority (TVA)<sup>10</sup> signed a project grant agreement with the Portuguese Centre Region Coordinating Commission (CCRC) to implement a MEREC demonstration project in the city of Guarda.

Guarda is an old medieval border town in the hinterland of Portugal, distant from the influences of metropolitan areas like Lisbon and Porto. Since the 1960s, the city experienced a population growth of 40,4%, caused by the rural exodus and the slowdown of the Portuguese European immigration. In 1980, the city had 17.948 residents inside a municipal jurisdiction of 40.360.<sup>11</sup> Guarda's main economic activities were trade and services (40,3%), manufacturing (31%) and agriculture (12,4%).<sup>12</sup> As a mountain city (1050m), the highest in the country, Guarda is located at the northeastern extreme of the Estrela Mountains. Guarda is set up in a granite region with forests and valleys with good agricultural soils.

The MEREC demonstration project was implemented in Guarda from 1983 until 1985, with the financial support of USAID and the technical assistance of TVA. MEREC drew a comprehensive planning process which involved Guarda's local administration, central and regional agencies, Portuguese universities and private consultants. In the 1980s, Guarda was one of the first Portuguese cities to have a sector/resource strategy and action plan that encompassed concerns with regards to energy/resource-efficiency. Although, the USAID-MEREC Guarda initiative mainly supported studies and plans, its projects have been followed through. In 1986, the architect Maria Castro<sup>13</sup> points out the major projects and results achieved: projects on small multi-purposed hydro power stations; projects in water and sewage systems, which intended to overcome the difficulties in the city's water supply, and thus building an efficient network; the updating of technical standards in construction related to energy conservation in buildings, therefore stimulating the use of local building materials (granite and wood); and the preliminary studies of the municipal master plan (PDM), which, as soon as it was legally approved, would become a tool for urban management and local autonomy in urban planning.<sup>14</sup>

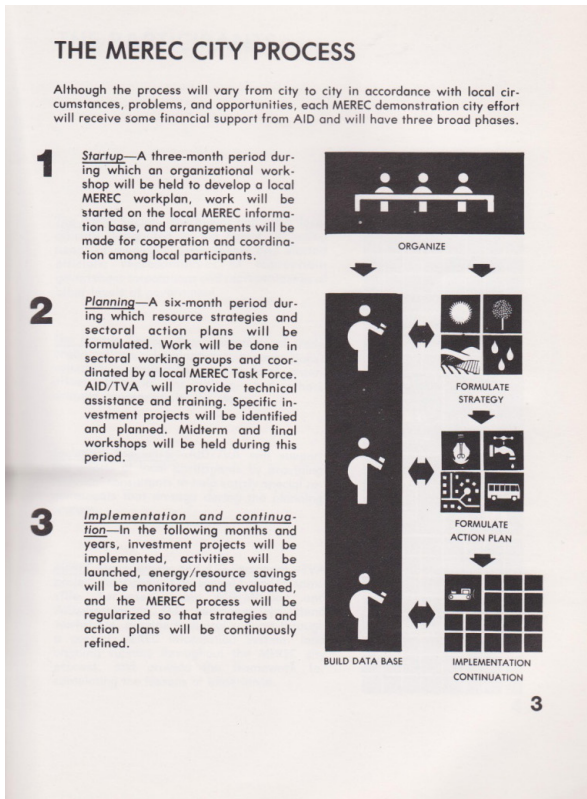


FIGURE 1 The MEREC city process, draws upon a comprehensive planning scheme.

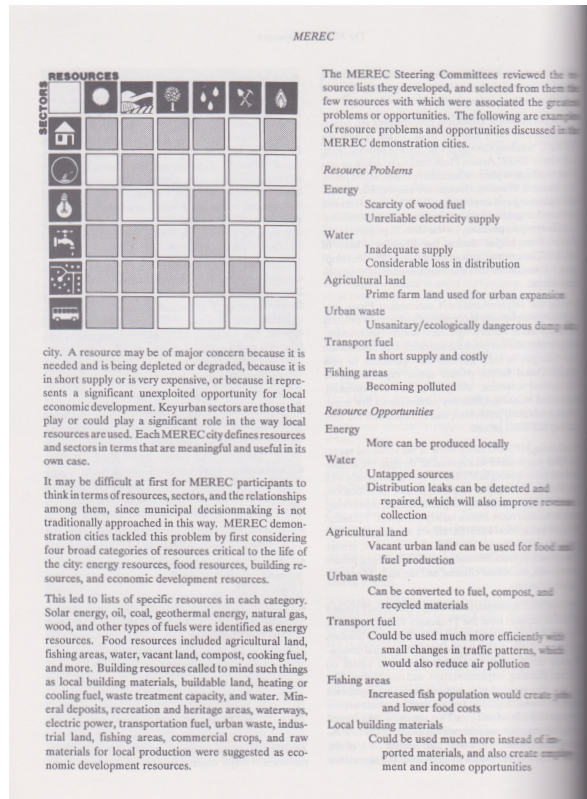


FIGURE 2 Graphic representation of MEREC sector/resource strategy matrix.

## METHODOLOGY

Development initiatives such as MEREC, carried out by international organizations such as USAID and TVA, are embedded in a modernist social engineering ideology.<sup>15</sup> We can say that both agencies were drawn within a democratic society, and their goals associated with the values of a stable and liberal democracy. Nonetheless, their impact stretched over to other countries, by investing in economic and social plans encouraging democracy.<sup>16</sup> It's not by chance that in the 1980's, MEREC took place in the Phillipines, a former USA colony, in Thailand, at the time under military rule after a short period of democratic rule, and Portugal just recently under its newfound democracy.

As James Scott argues, we can look at MEREC demonstration project as representation of order and efficiency, which by working on a smaller scale - midsized cities - miniaturises a given order, in this case, an order for resource-efficiency. Yet, the MEREC demonstration project, although it had a pilot run in Tacloban, followed by Pukhet and Guarda, it didn't endure in order to become a "rational form of policy and planning".<sup>17</sup> In our view, this has to do with three aspects. First, MEREC's design did not incorporate the development of large, capital and pure technical exercises. On the contrary, they were dependent upon the enrolment of all stakeholders. Also integration and coordination weren't always attainable, as we will see in Guarda's case. Second, MEREC was an initiative with constraints in time and funding, an initiative that ended after a three year span set by USAID. Furthermore, the compliance with planning principles depended only on the compliance of the states in which USAID worked. Ultimately, the MEREC demonstration project ended after the oil crisis had been forgotten. By 1987, the opportunity for MEREC to achieve another scale was weakened by restrictions in the USAID budget as well as its internal office restructuring.<sup>18</sup>

In this article, we focus on the historical background leading to the implementation of MEREC in Guarda, a programme designed for developing countries. Above we have outlined the consequences which lead to the development of MEREC programme in USAID and its theoretical basis as well as what exactly MEREC consisted of. The following chapter explores the social and political context leading to the implementation of the programme in Guarda, Portugal. We will see, that MEREC was implemented at a time, when Portugal was in the process of shaping itself as a modern democratic country; so were the society, institutions and urban fabrics of its cities. We believe, that the MEREC project in Guarda, represents a local process, or, as Tim Mitchell stresses, a local performance, that reveals the “efforts, encounters, and struggles in which the nation and its modern identity are staged and performed.”<sup>19</sup> Portugal, following the end of its dictatorship was looking for new ways to develop its democratic present, within a framework of steep social, political, institutional and economic changes.

The impact of the MEREC demonstration project is evaluated by examining the discourse of its stakeholders, and how its methodology perpetuated in urban management, planning, construction and architecture. We will argue, that, despite the fact of MEREC-Guarda being considered a success in resource-efficiency by all national and international parties, its results and teachings did not persevere. The discrepancies between the aims of a local, regional and central governance under development and wider social changes resulted in difficulties in the perpetuation of MEREC’s core concepts. The procedures in urban management, which were implemented during the three years MEREC process, suffered from changes and were hampered by a central administration delaying the legal approval of the municipal master plan (PDM). In the construction sector, MEREC initiatives aiming at the use of local building materials and energy efficiency techniques in building had to cope with the changes of a more liberal society, in which, due to a lack of housing stock, an urgency to build arose, and the reduction of the use of local building materials took place.



FIGURE 3 MEREC-Guarda Logo. All the entities are represented: Guarda Municipality, CCR, USAID, TVA.



FIGURE 4 Guarda in the Centre Region of Portugal, 1986.

## MEREC-GUARDA: AN EXPERIENCE DURING THE MAKING OF THE PORTUGUESE DEMOCRACY

After the Portuguese democratic revolution in 1974 and with the end of the colonial empire, Portugal was finding a way to reposition itself in Europe, and in the world. The 1973 oil crisis surmounted the Portuguese political and social revolution, and, in doing so, weakened its capacity to respond to the international crisis. Portugal wanted to overcome its economic delay in order to achieve European living standards and started building a liberal market without leaving international financial and technical agreements with institutions, such as the EEC, OECD, EFTA and USAID aside.<sup>20</sup> Ultimately, its goal was to become a member state of the European Economic Community (EEC); as it did in 1986. In 1975, in the middle of the cold war, as Portugal signed agreements with countries of the eastern block, the presence and influence of US- Military,<sup>21</sup> diplomats and institutions (like USAID), was perceived as a way to mitigate the red threat.<sup>22</sup>

In 1983, after concluding almost a decade of democratic existence, Portugal was still facing political and economic instability receiving support of the IMF for the second time, when USAID-MEREC arrived. As the Portuguese Central Regional Coordination Commission (CCRC)<sup>23</sup> signed the agreement with USAID, Portugal could not be considered a developing country anymore. In 1985, Santos argues, that Portugal was somewhere in between the social indicators which set first and third world countries apart. In comparison to the levels of social capitalist production, it appeared different, with high levels of social reproduction through consumption practices.<sup>24</sup> However, Portugal was still a developing country in terms of energy conservation, based on low levels of energy per capita<sup>25</sup> left behind by the previous regime. In addition, the dictatorship had maintained an accentuated asymmetrical relation between an urban/industrial infrastructural coastline development since the 1930s, from Porto to Lisbon/Setúbal. Thus, all the regions that didn't provide raw material for industry were somehow boxed up by themselves.

MEREC project took place during a time of national and regional self-assertion. Portugal needed to overcome the enclosure, as its hinterland had been left highly dependent on central governance.<sup>26</sup> Additionally, newly democratically elected municipal governments were only a decade old. In 1977, the Portuguese law was handing over authority for economic and social development, planning and infrastructure requirements to local governments.<sup>27</sup> In strengthening financial capacities, municipal power was reinforced and gave rise to the fulfilment of the population's interests and lead to a large infrastructural development, which enabled local economies.<sup>28</sup>

## MEREC-GUARDA ON DECENTRALISATION, URBAN MANAGEMENT AND PLANNING

It was due to the interest of Manuel Porto, head of CCRC, that MEREC happened in Guarda. After a visit to the TVA, he envisioned MEREC as an approach, as a tool for regional development.<sup>32</sup> He also believed, that empowering municipalities, in giving them new capacities and abilities to work together, would be a better way for achieving greater responsibilities in regional social and economic growth for them.<sup>33</sup> Consequently, it would decentralise power as well as technical capacities. As for the municipal president Abílio Curto, he welcomed MEREC to the city at a time when all municipalities were engaged in strengthening their roles.<sup>34</sup> Therefore, according to him, MEREC was a pioneer project that brought all levels of governance to the table. In 1983, MEREC built an integrated steering committee with municipal, regional and central government agencies, along with Portuguese universities and private consultants. These stakeholders were engaged in a planning process, that by acting on energy conservation, could, as MEREC consultants point out, attract “funds for improving the quality of urban life” and contribute to “advancing decentralization of capacity and authority of lower levels of government.”<sup>35</sup>

In fact, what contributed to such an encouraging conclusion of MEREC's consultants was a three year process (1983-1985), which, set a framework for energy and resource efficiency in that time span and at all levels in examining local and regional opportunities. This was achieved by empowering the municipality with technical resources. João Rebelo, engineer and MEREC regional-coordinator, emphasises, that the majority of the Portuguese municipalities were fragile structures with a striking absence of technicians in several domains.<sup>36</sup> In *"Managing and Planning Resources at a Local Level"*<sup>37</sup> Rebelo talks about MEREC's methodology, Guarda's project and its expansion to seven other cities in the Centre Region of Portugal after USAID left Portugal.<sup>38</sup> Rebelo outlines the upsides of MEREC as follows: resources survey, clarification and definition of responsibilities, coordination of several administration levels, pedagogical and formative action, urban management improvement, search for requisite funding.<sup>39</sup> However, Rebelo is aware of the difficulties that the Portuguese regional development strategy faced. First, Portugal lay behind Europe in economic, political and social structural changes, taking place since World War II. According to him, those changes just started to occur after Portugal signed the agreement with the EEC.<sup>40</sup> Secondly, Portugal needed a *"coherent strategic training project for all actors in planning, regional and local development"*.<sup>41</sup> MEREC exposed the difficulties in urban management: in information flow, in the dialogue between local department offices as well as the local and central administration. Thirdly, MEREC outlined the importance of discussion, in order to assess problems and opportunities, clarifying concepts, setting strategies, and also the importance for decentralised technical capacities. And finally, for a local administration to achieve the capacity to manage and implement plans, it was crucial that the technical means existed.<sup>42</sup> But, with small technical structures, the local administration depended upon the funds from the central and regional administration to establish offices for technical support, GATs.<sup>43</sup> When technical grants ended, technicians left, taking with them the possibility of resource-knowledge transfer to occur.

Trough MEREC, Guarda gained capacities in strategic development, urban design and management, and the municipal master plan (PDM) became a tool for accomplishing projects pointing towards resource conservation. Eric Chetwind, regional planner and USAID advisor, says, that Guarda was the best example of the value of land use planning and resource conservation. *"Because land use is cross cutting, affects most of the other sectors. [...] including energy and resource conservation."*<sup>44</sup> Throughout MEREC studies in the PDM it was possible to set *"a major step in gaining control over the use of the urban land resource and managing it for its highest and best use"*.<sup>45</sup> In 1989 Maria Castro, architect, planner, and MEREC local team-leader, pointed out the achievements of MEREC in land use planning and urban management until 1986. In 1983, due to Guarda's population growth the city presented a scattered urbanisation, that threatened agricultural lands through the expansion of urban neighbourhoods. Then, during the MEREC project, within the sector of land use, it was possible to achieve a *"transparent and peaceful urban management"*.<sup>46</sup> MEREC established a working process, that allowed for the interconnection of the municipal departments and central administration through dialogue. According to Castro, that dialogue engaged all participants in practicing joint decisions, that overturned the absence of planning tools and rules for land development. This formed a common understanding around the master plan, looking at it like a process of continuous and joint interactions between all actors and ac

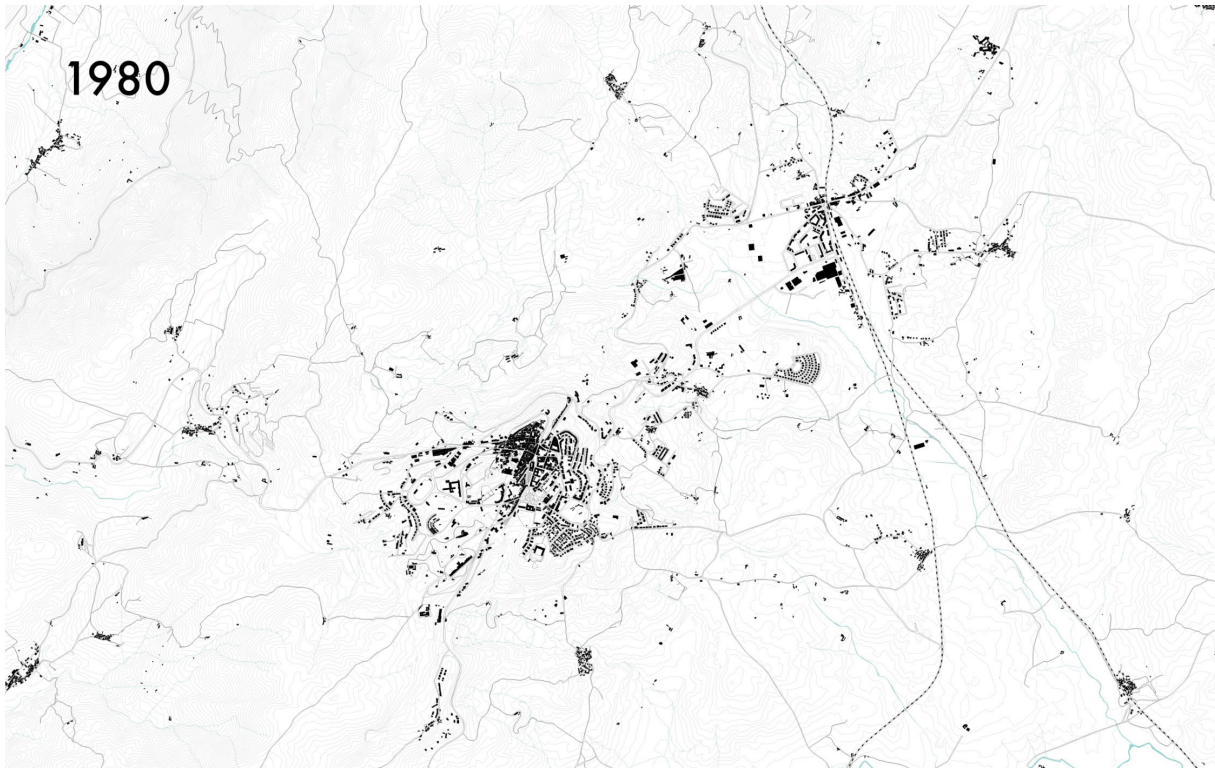


FIGURE 5 1980s Guarda city map



FIGURE 6 Guarda's North cityscape in the 1980s. Photography by Leah Bendavid-Val.



FIGURE 7 MEREC campaign on Master Plan. “Master Plan: Economic Council Development, Preservation of heritage values, Improvement of the quality of life. - DON’T BUY LAND WITHOUT MAKING SURE OF ITS CONSTRUCTION AVAILABILITY. (!) (...) CHECK WITH THE CITY HALL (!)”



FIGURE 8 Local Newspaper with an educational campaign on the safeguard of traditional architecture. “TRADITIONAL ARCHITECTURE IS AN IRREPLACEABLE CULTURAL HERITAGE(!) LET US NOT ALLOW IT’S DISAPPEARANCE(!)”

When Guarda’s urban perimeter was defined, MEREC sponsored a campaign for housing developers and other small private investors, so that they could be informed on the construction-feasibility of the land. After this, the pressure to build outside the new urban perimeter decreased. Nonetheless, inside MEREC’s local office an effort was made to tackle urban design. They aimed to improve the urban design quality of adjacent real estate development projects by avoiding *cul-de-sac* solutions and the absence of green areas or other facilities.<sup>48</sup>

Castro aimed for the completion of the PDM in 1987, which did not occur. The PDM’s legal approval by the central administration had been delayed. Therefore, the political instability between 1974-1987 contributed to a translation in planning, which ended in “eight different prime ministers, with eleven different ministers responsible for planning.”<sup>55</sup> The Portuguese legislation for PDMs was enacted in 1982,<sup>56</sup> and the architect and urbanist Nuno Portas integrated the working groups who were responsible for it. Though he saw in the PDM a tool for orchestrated local and regional development, he criticized the uncertain position in which PDM was found in 1988, when he encountered a central administration that was incapable to comply with it.<sup>57</sup> Ultimately, the Portuguese need for absorbing community funds and public expenditure on infrastructure lead towards to the obligation to conclude planning processes for municipalities at the end of 1990.<sup>58</sup> In this framework, as Castro argues, the negotiation with the central administration was hindered by its disregard for the work done by the municipalities, favouring only its legal compliance.<sup>59</sup> Consequently, Guarda’s master plan found its legal approval only in 1994, nine years after its first studies were made with MEREC’s support.



## MEREC-GUARDA AND THE DEMISE OF TRADITIONAL ARCHITECTURE AND MATERIALS

In Guarda, MEREC's civil construction sector invested in technology research. They updated building codes and construction standards, thus, promoting energy efficient solutions adapted to Guarda's climate. Four brochures had been published, which explored new construction techniques that proposed the thermal insulation of walls and roofs, increasing thermal comfort between wide temperature ranges, and so consequently leading to energy savings on heating. These brochures were accompanied by a local survey on existing granite quarries. MEREC's project design aimed at the use of local building materials - granite and wood - with the intent to stimulate geological and forested resources, thereby enhancing the local economy. Efforts in this sector resulted in the construction of new primary schools and a community centre, making use of new efficient design solutions and local building materials. Architect and CCRC MEREC team member João Mendes Ribeiro, expresses the positive results of those experiences: *"It was possible to use local building materials with the same cost per square meter [than other materials], in some cases it was possible to reduce costs. Therefore, the quality of construction clearly increased."*<sup>60</sup> Furthermore, several educational campaigns made their way through meetings with building contractors and local newspapers, in order to encourage energy efficiency. Also, MEREC was providential to a jeopardized historical centre. Research studies and campaigns on the construction sector were paramount to the ongoing rehabilitation of Guarda's historical centre, as for the awareness on the importance of traditional architecture in cultural heritage.

Yet, it's in the assertive discourse of architect Maria Castro that we find an unpleasant portrait of Guarda "...we started to witness situations of urban dispersion and of defective growth, with buildings of disproportionate and megalomaniac gigantism, with a civil construction of bad quality, irreversible misappropriations in buildings of historic value or regretful destructions of the natural landscape. This, facing the blindness or even the applauding of the residents and the local responsible people, obsessed with a mirage of progress which they presupposed, and in some cases presuppose, to be living."<sup>61</sup> Architect Sérgio Gamelas, MEREC civil construction coordinator, reports, that the use of old building techniques, which applied wood or granite, in comparison to new market solutions, which required less maintenance were becoming costly,<sup>62</sup> and, people considered the price a decisive factor.

The use of local building materials and energy efficiency concerns did not match this society in its transformation. It was in the mid-1970s, after the return of immigrants, that the housing shortage was overcome by the idea of a nation of house-owners.<sup>63</sup> Castela shows, how private construction material companies, through advertisements in national newspapers, adopted a concept of urgency in nation-building, pointing to the separate family house.<sup>64</sup> With the Portuguese accession to the EEC, the financing of the Portuguese economy, businesses in housing and construction gained ground. In addition, Villanova et al conclude, that immigrants were culturally changed by their access to other consumption models, and they participated in an aesthetic, spatial, and material transformation of landscapes.<sup>65</sup> This favoured a society which quickly reached new patterns of consumption and life aspirations, and where a cultural need to break with the rural image set by the former dictatorship became important. It took some time, namely through the implementation of Community Directives into national law, until conceptions for building materials and energy efficiency became part of the Portuguese building culture

## CONCLUSION

In an interview, MEREC advisor and regional planner, Bendavid Val was asked about how he would evaluate the MEREC project and how he would assess the results. He responded, that he can see the environmental and resource benefits immediately, and that “... *the real lasting impact is the institutional impact, and the impact on the way institutions operate (...)*”.<sup>66</sup> Clearly, Guarda benefited from the three year long MEREC experience, and saw environmental and resource benefits in water consumption, sewage systems, planning and construction. However, the institutional impact can only be measured by the expansion of the experience by the CCRC to seven other Portuguese cities, after USAID and MEREC advisors left Portugal.

Could MEREC methodology endure in time? Although, the path for city’s energy-resource-efficiency proposed by MEREC, brought upon a highly collaborative process between technicians and institutions through action-research projects, the political interest regarding resources was hushed up in the years that followed. MEREC’s effectiveness relied upon the response and cooperation of all stakeholders in order for its principles to achieve a deeper socio-political impact. The MEREC planning strategy was undermined by a modern democratic state in its early stages of construction. The political instability of the Portuguese state and its reorganization reflected upon its institutions (central and local) and in the unassertive way in which modern planning tools were used.

An impact of MEREC in time could only be achieved through the engagement of a real political interest in energy and resource efficiency. The end of the oil crisis marked the end of the MEREC programme within USAID. And, with the Portuguese accession to the EEC, Portugal entered a path of accelerated development, establishing a consumer society with consumer habits, not particularly engaged in adopting nor assuring energy efficient measures in housing or other urban sectors. In Guarda’s case, this had consequences for the urban landscape, infrastructural development and the quality of housing stock. The compliance with MEREC methodology, was compromised by its institutions, through a highly centralized institutional context, and a tough political will in a local environment which lacked training and technical support. As we have seen, MEREC’s project was surpassed by a democratic setting that sought a major overhaul as a means to promote a rapid modernisation. There was a mismatch between what MEREC proposed, and Guarda’s misguided political conception of progress between institutions and society expectations.

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## Disclosure Statement

No potential conflict of interest is reported by the authors.

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## Image Sources

Figure 1: Bureau for Science and Technology AID, 'MEREC: Field Manual' (USAID. Bureau for Science and Technology Office of Multisectoral Development, 1982), 3.

Figure 2: Avrom Bendavid-Val, 'More with less: managing energy and resource efficient cities' (USAID. Bureau for Science and Technology Office of Multisectoral Development, 1987), 34.

Figure 3: Avrom Bendavid-Val, 'More with less: managing energy and resource efficient cities' (USAID. Bureau for Science and Technology Office of Multisectoral Development, 1987), 49.

Figure 4: © Cátia Ramos.

Figure 5: © Cátia Ramos.

Figure 6: Avrom Bendavid-Val, 'More with less: managing energy and resource efficient cities' (USAID. Bureau for Science and Technology Office of Multisectoral Development, 1987), 42.

Figure 7: Eduardo Lourenço Municipal Library: Newspaper Archive [RP-227].

Figure 8: Eduardo Lourenço Municipal Library: Newspaper Archive [JP-14].

Figure 9: Eduardo Lourenço Municipal Library: Newspaper Archive [RP-227].

## Endnotes

- 1 Avrom Bendavid-Val, 'More With Less : Managing Energy and Resource Efficient Cities' (USAID. Bur. for Science and Technology. Ofc. of Multi-sectoral Development, 1987)
- 2 "Only in the highly organized, carefully designed, and globally interconnected metropolises does any hope exist for coping successfully with prospective resource scarcities. Cities must diversify activities, acquire new competencies, preserve knowledge, and accumulate structure in dimensions and directions that are only becoming evident. In the long run they should be able to provide the stable natural environment with-in which the further evolution of living species, including man, will be accelerated." Richard L. Meier, *Planning for an Urban World: The Design of Resource-Conserving Cities* (M.I.T Univ Press, 1974), 1-7, 19.
- 3 The authors examined the cities of Seoul, Hong Kong, Manila, Mexico City and Osaka. Richard L. Meier et al., 'Urban Ecosystem and Resource - Conserving Urbanism in Third World Cities' (Energy and Environment Division of Lawrence Berkeley Laboratory and Institute for Urban and Regional Development at UC Berkeley. Contract No. WW/0003-2-79., March 1981), 5-6.
- 4 *Ibid.*, 5.
- 5 The recommendations pointed towards the importance of information and knowledge resource transfer regarding energy; the promotion of biomass projects; the integration of agricultural production in the vicinity of urban lands; the promotion of soft modes of transportation; the creation of institutional and financial engagements for projects aiming to save fuel, food and water; enabling technologies that perform in resource-efficiency; and finally, the use of advanced research to overcome inefficient use of resources revealed by a ecosystem analysis. Meier et al., 'Urban Ecosystem and Resource - Conserving Urbanism in Third World Cities', 6-7.
- 6 "The urban ecosystem we propose to explore and develop views cities as the loci of living populations interacting with the built and artificial environment. [...] Transactions in the city require energy and other resources with different amounts of order (knowledge and organization) to maintain life, resources, and particularly energy, are supplied in the form of food and fuel, and indirectly in the form of material inputs. There is implicitly, therefore, an energy accounting system, just as there is an accounting system for money." Meier et al., 'Urban Ecosystem and Resource - Conserving Urbanism in Third World Cities', 8.
- 7 Eric Chetwynd and William Miner, *Pioneering Urban Development Policies and Programs in USAID (1970-1982)*, Unpublished Work, n.d., 189.
- 8 Bendavid-Val, 'More with less : managing energy and resource efficient cities', 1.
- 9 MEREK was implemented in cities with diverse population sizes from 40.000 to 100.000. *Ibid.*, 1-2.
- 10 TVA was an achievement of Roosevelt's New Deal Planning. Peter Hall argues that until 1936 TVA was perceived in its early years as one of the great examples on regional planning and grass root democracy, changing thereafter. Since the 1940's, TVA is an energy agency of USA. cf. Peter Hall, *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*, 4th ed. (Oxford: Wiley-Blackwell, 2014), 183-188.
- 11 INE, *Recenseamentos da População e da Habitação* (Lisboa: INE - Statistics Portugal, 1981).
- 12 *Ibid.*
- 13 Architect and Planner Maria Castro was a technician of Guarda Municipality until 1988 and the MEREK-team Municipal Planning Coordinator until the end of the MEREK demonstration project in 1985.
- 14 Maria José Abrunhosa de Castro, 'Projecto MEREK: Guarda Cidade Piloto', *Oppidana: Boletim Municipal*, November 1986, Ano 1 n.º 0.
- 15 James Scott argues, they stand for a high-modernist vision, that exclusively relies in a vision of rational, techno-scientific progress, which emerged after the I world war. James C. Scott, *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed*, Yale Agrarian Studies (New Haven: Yale University Press, 1998), 5, 90.
- 16 Timothy Mitchell argues about the role of USAID in transforming egyptian agriculture, property and economy by USAID since the 1970s and the use of the 'democracy' flag. Timothy Mitchell, *Rule of Experts : Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002), 209-41.
- 17 *Ibid.*, 257.
- 18 Eric Chetwynd, Interview with regional planner and USAID MEREK advisor Eric Chetwynd on MEREK, 17 October 2012.
- 19 Timothy Mitchell, 'Heritage and Violence', in *Rule of Experts : Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002), 183.
- 20 José Ferreira, 'Portugal Em Transe', in *História de Portugal*, ed. José Mattoso, vol. 8 (Lisboa: Editorial Estampa, 1994), 140-148.
- 21 We cannot forget the role of Great Britain and the United States in the military base of the Azores at the end of the II World War, and the Portuguese integration in NATO. *Ibid.*, 185.
- 22 Camilo Cortesão, Interview with architect and MEREK consultant Camilo Cortesão on MEREK. 15 February 2016.
- 23 Regional Coordination Commissions were created in 1979, as an extension of the Ministry of Interior, providing support and coordinating municipality's activities. CCRC department provided support on local resources, statistics, economics, and technical training for the municipality and offices for technical support (GAT offices).
- 24 Boaventura de Sousa Santos, *Estado E Sociedade Na Semi-Periferia Do Sistema Mundial: O Caso Português* (Lisboa: Análise Social, 1985), 869-870.
- 25 Sofia Henriques, 'Energy Transitions, Economic Growth and Structural Change Portugal in a Long-Run Comparative Perspective' (Dissertation (Monograph) Economic History, Lund University, 2011), 202.

- 26 César Oliveira and Nuno Monteiro, *História dos Municípios e do Poder Local [dos finais da Idade Média à União Europeia]*, *Grandes Temas da Nossa História* (Lisboa, 1996), 313.
- 27 Public water supply, sewage system, municipal roads, primary schools, markets. *Diário da República, Lei n.º79/77 [Duties and powers of local authorities and respective organs] Atribuições das autarquias e competências dos respectivos órgãos, 1977.*
- 28 Ferreira, 'Portugal Em Transe', 1994.
- 29 Abílio Curto, Interview with Guarda's municipality president Abílio Curto on MERECE, 14 March 2016.
- 30 Between 1960's and 1970's Guarda had one of its highest population rates (36.1%), due to the decline of rural population, and the slowdown of the Portuguese European immigration. That rate continued to increase in the following decades (3.1% in 1981 and 5,0% in 1991). From 1970 to 1981, we have to attribute this positive rate to the returnees from former Portuguese colonies.
- 31 Maria José Abrunhosa de Castro, 'Guarda: MERECE e PDM, 3 anos depois.', *Sociedade e Território*, no. 9 (July 1989): 45.
- 32 Chetwynd and Miner, *Pioneering Urban Development Policies and Programs in USAID (1970-1982)*, 207.
- 33 Manuel Porto Manuel Porto, "A adesão à CEE: implicações para a política de desenvolvimento regional em Portugal." *Separata do Boletim da Faculdade de Direito: Adesão à Comunidade Europeia; Portugal, Desenvolvimento Regional*. (1983):18-19.
- 34 Abílio Curto was the President of Guarda Municipality for almost 20 Years (1976-1995). Curto, Interview on MERECE.
- 35 Bendavid-Val, 'More with less : managing energy and resource efficient cities', 57.
- 36 João Rebelo, Interview with engineer and MERECE regional coordinator João Rebelo on MERECE, 10 August 2012.
- 37 João Rebelo, 'Gestão e Planeamento de Recursos a Nível Local: o caso do projecto MERECE', *Revista Crítica de Ciências Sociais*, no. 25/26 (1988): 223-40.
- 38 USAID assistance ended after Portugal's accession to the EEC, in 1986. Even though, MERECE's working methodology towards resource efficiency was then expanded to other seven cities in the centre region of Portugal: Aveiro, Castelo Branco, Covilhã, Figueira da Foz, Leiria, Mangualde, Viseu. However, Architect Camilo Cortesão, MERECE consultant, and Architect João Mendes Ribeiro from MERECE's regional team, unanimously say, that the results were not so compelling as in Guarda's project.  
Cortesão, Interview with architect and MERECE consultant Camilo Cortesão on MERECE; Ribeiro. Interview with architect and MERECE's regional team member João Mendes Ribeiro on MERECE, 02 October 2012.
- 39 Rebelo, 'Gestão e Planeamento de Recursos a Nível Local: o caso do projecto MERECE', 225.
- 40 In the 28th of March of 1977 Portugal made its request for EEC membership.
- 41 Rebelo, 'Gestão e Planeamento de Recursos a Nível Local: o caso do projecto MERECE', 226.
- 42 *Ibid.*, 227-229.
- 43 GAT, *Gabinte de Apoio Local* is the Portuguese acronym for "Office For Technical Support". GATs were created and funded by the central administration, and were responsibility of the CCR and municipalities. These offices provided technical support to the municipalities, augmenting their technical domains in architecture, engineering, economy, etc.
- 44 When asked about how land use was included in to Guarda's resource strategy. Eric Chetwynd, Interview with USAID MERECE advisor Eric Chetwynd on MERECE, 17 October 2012.
- 45 Bendavid-Val, 'More with less : managing energy and resource efficient cities', 57.
- 46 Castro, 'Guarda: MERECE e PDM, 3 anos depois.', 45.
- 47 *Ibid.*, 45-46.
- 48 *Ibid.*, 46-47.
- 49 *Ibid.*, 45.
- 50 *Ibid.*, 49.
- 51 *Ibid.*, 48.
- 52 Curto, Interview on MERECE.
- 53 INE-Statistics Portugal.
- 54 *Diário da República, Decreto de Lei, 48/79, [Basic Funding Law] Lei das Finanças Locais, 1979.*
- 55 Idalina Baptista, 'How Portugal Became an "Unplanned Country": A Critique of Scholarship on Portuguese Urban Development and Planning', *International Journal of Urban and Regional Research* 36, no. 5 (September 2012)
- 56 *Diário da República, Decreto de Lei 208/82, [Master Plan as tool for territorial planning] Estabelece o Plano Director Municipal como Instrumento de Ordenamento do Território. 1982.*
- 57 Nuno Portas, 'Sobre alguns problemas da descentralização', *Revista Crítica de Ciências Sociais*, no. 25/26 (1988): 76.
- 58 *Diário da República, Decreto de Lei 60/90 [Municipal Land Use Plans] Planos Municipais de Ordenamento do Território PMOT, 1990.*
- 59 Maria José Abrunhosa de Castro, 'Os PDM's de 1ª Geração - Planos Cinzentos, Ordenamento Formal, Resultado Incerto.', *Sociedade E Território*, no. 22 (Setembro de 1995): 35.
- 60 Ribeiro, Interview with architect João Mendes Ribeiro on MERECE.
- 61 Maria José Abrunhosa de Castro, 'Recuperação Urbana no Centro Histórico da Guarda (1980/1990)', *Sociedade e Território*, no. 14/15 (1991): 35.
- 62 Sérgio Gamelas, Interview with architect and MERECE construction sector coordinator Sérgio Gamelas on MERECE, 16 February 2016.
- 63 Tiago Castela, 'A liberal space : a history of the illegalized working-class extensions of Lisbon' (Dissertação de Doutoramento em Arquitectura, University of California, 2011), 147.
- 64 *Ibid.*, 148.
- 65 Roselyne Villanova, Carolina Leite, e Isabel Raposo, *Casas de Sonhos* (Edições Salamandra, 1995).
- 66 Avrom Bendavid-Val, Interview with Regional Planner and USAID-MERECE advisor Avrom Bendavid-Val on MERECE, 18 October 2012.